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Demand determinants of cruise tourists in competitive markets: motivation, preference and intention

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The purpose of this study is to develop and estimate an integrated structural path model of the determinants of cruise demand based on the nexus of motivation, preference and intention of cruise tourists. The paper identifies the drivers of this demand in competitive markets. The model results show that different cruise motives have a significant effect (positive or negative) on specific cruise preferences and intentions, while some significant relationships between cruise preferences and intentions could also be found. Based on this structural path model, the authors apply an ANOVA approach to compare the differences of cruise motivations and cruise preferences in Asian markets in order to trace the instrumental determinants of cruise passengers, leading to a new understanding of the commonalities and differences of cruise competitiveness in different regional markets.

Keywords: cruises; cruise passengers; motivation; preference; intention; competitiveness

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Tourism has become one of the fastest growing economic sectors in the world. Its significance is still rising and may be expected to continue to grow with globalization and economic growth. It is a multifaceted sector, with many groups of stakeholders involved (Goeldner and Ritchie, 2011). The most prominent among these are: (a) the demand side (customers, clients, tourists, etc); (b) the supply side (providers of tourist services, travel agencies, carriers, etc); (c) tourist destinations (local communities, landscapes, restaurants, etc); and (d) regulatory systems (government, tourist organizations, etc). On the supply side, cruise tourism has formed an increasingly important segment. This used to be a leisure activity for the 'happy few', but in the past 20 years we have witnessed the flourishing of the cruise sector. Cruises are becoming more and more a regular part of the international tourist market.

The origin of the cruise line can be traced back to the 19th century, when ocean liners were first used as a mode of long-distance transportation between different countries and continents. After the Second World War, however, with the development of commercial airlines and global tourism, international tourists increasingly opted to travel by air, and, as a consequence, the cruise industry suffered badly. In the late 1960s, the rise of the modern cruise industry began in North America; it started to boom with the introduction of the 'fun ship' in the Carnival Cruise Group. Since the 1980s, cruising has become the fastest growing sector in the tourism and leisure industry worldwide, with an average annual growth rate of 7.2%. According to a Florida–Caribbean Cruise Association report (Florida–Caribbean Cruise Association (FCCA), 2014), there were 21.3 million global cruise passengers in 2013, and the growth of the cruise industry continued in 2014, with 21.7 million cruise passengers, 11.9 million sourced from North America, and 9.8 million from elsewhere; and Asia's share of the global cruise market was 4.4%, similar to that of Alaska of 4.5%. The average cruise ship can carry 2,550 passengers and 480 crew members, who have, respectively, an average expenditure across all destinations of US$95.92 and US$96.98 on each port visit (day visits or overnight stays), conservatively generating US$225,596 and supporting 45,225 cruise-related jobs for the port city during a single cruise visit[1] (FCCA, 2012). As reported by the Cruise Line International Association (CLIA, 2015), most of the prominent cruise companies (for example, Princess, Royal Caribbean International, Costa, Star Cruise, etc) will develop their Asian markets in 2015, with 52 cruise ships offering a total of 1,065 separate cruise products, with 9 of the 52 ships operating all-year round in Asia. It is expected that Asian cruise capacity will reach 2.17 million passengers by 2015, with 2.05 million passengers on 'Asia–Asia cruises' and 115,360 on 'Voyages sailing through Asia', which means that 94.47% of these cruise passengers are primarily from Asia. The Asian cruise market has developed significantly, and cruise companies are becoming increasingly aware of the potential importance of Asian cruise tourists and their specific needs.

This research is based on conceptual frameworks related to behaviour motivation (Berkman and Gilson, 1978), travel motivation (Crompton, 1979), attributes of tourist destinations (Goodrich, 1978), cruise tourists' preferences (Xie *et al*, 2012) and cruise intentions in relation to loyalty, familiarity, satisfaction and value perception (Petrick, 2004; Petrick and Sirakaya, 2004; Petrick *et al*, 2007). Thereby, our study attempts to clarify the relationship between motivation, preference and intention in cruise tourism consumption,

which all increase the core competitiveness of cruise tourism in growing regional markets. The aim of this paper is to extend the previous elements of a consumption motivation model to consumption preference and intention, switching the focus of cruise research from the mature markets (North America, Europe) to the Asian competitive markets. This study reviews the literature on cruise motivation, preference, intention and competitiveness. After the literature review, we use factor analysis to uncover the different dimensions of cruise motivation and preference. Then it tests three groups of hypotheses through a structural path model concerning the regression relationships between cruise motivation, preference and intention. Furthermore, this empirical study refers mainly to the competitive Asian market. In order to elucidate the cruise core competitiveness in growing Asian markets, a one-way analysis of variance (ANOVA) compared the differences of cruise motivation and preference in the markets of mainland China, Hong Kong, Taiwan, Japan, and the rest of the global regions.

Although the global cruise industry has increased continuously in recent decades, there are doubts about the homogeneity of cruise markets. Some cruise companies are aiming to develop new markets with universal cruise products and services, but are suffering from the problem of a low occupancy rate or non-benign low-price competition. Therefore, we raised two questions: (a) what is the core competitiveness of cruise tourism?; and (b) (in exploring the core competitiveness from the perspective of cruise tourists' demand) how can it be maintained in increasingly competitive markets? Our study contributes to the existing literature on international tourism by zooming in on the complex mechanism of the emerging cruise markets. It expands the previous research of independent cruise consumption to build an integral model of cruise motivation, performance and intention. In addition, we identify the heterogeneity of cruise markets through employing ANOVA to compare the commonalities and differences of the five markets to draw out some universal standards of cruise competitiveness, which would help cruise companies to develop their cruise products in Asian markets.

Literature review

The literature analysis of cruise tourist demand is presented in terms of three determinants: motivation, preference and intention, with a further review of competitiveness and the interaction among the demand determinants. There is rich and varied research on tourists' motivation, preference, intention and competitiveness, but comparatively few academic studies focus specifically on cruise tourism.

As far as psychological or biological needs and wants are concerned, motivation is the driving force behind a person's direct behaviour and activity (Dann, 1981; Uysal and Hagan, 1993). Mayo and Jarvis (1981) pointed out that people may take a trip to fulfil both their physiological (food, climate, health) and psychological (adventure, relaxation) needs. Iso-Ahola (1982) developed a seeking-escape tourism motivation model. Beard and Ragheb (1980, 1983) adopted Maslow's (1970) motivation theory to identify a leisure motivation measurement scale, with four motives leading to leisure travel satisfaction: intellectual;

social; competence-mastery; and stimulus avoidance. As a complicated concept, motivation varies from one person to another, from one market segment to another, from one destination to another, and from one-decision making process to the next (Uysal and Hagan, 1993). Generally, motivation is divided into 'push' and 'pull' factors: push factors refer to the intangible and intrinsic personal preferences of tourists (Crompton, 1979), and pull factors relate to the tangible and external attributes of destinations (Kozak, 2002; Bansal and Eiselt, 2004; Neuts *et al*, 2013). Qu and Ping (1999) investigated Hong Kong cruise tourists' motivations, and found their major motivational factors to be: escape from normal life; social gathering; beautiful environment; and scenery. Lu (2001) studied Taiwanese cruise tourists, identifying that push factors were: lifelong learning; escape and relaxation; adventure; belonging; and status seeking; and that pull factors were: national environment and safety; entertainment and sports recreation; nature and wilderness; learning opportunities; modernity; and facilities. In another study of Chinese cruise tourists' motivations from a cultural-historical perspective, Fu *et al* (2010) proposed a conceptual model of Chinese cruise tourists' motivation, finding the push factors to be: spiritual purification; moral enlightenment; relaxation and refreshment; escaping; social gathering; family happiness; and cultural discovery; and the pull factors to be: openness; freedom; beautiful scenery; cultural attributes; and entertainment. They tested the model empirically and found that underlying Chinese associations with water in leisure travel related to life, flow and energy, purity, freshness and a natural state of being.

According to Jacoby and Chestnut (1978), consumer knowledge has two components: familiarity and expertise. Familiarity refers to the number of product-related experiences that have been accumulated by the consumer, while expertise refers to the consumers' ability to perform product-related tasks successfully (Jacoby and Chestnut, 1978). Cruise tourists and potential cruise tourists differ from each other in product-related knowledge and motivations (Gitelson and Crompton, 1984), which in turn may result in their perceiving on-board attributes differently. For instance, cruise tourists and potential cruise tourists may differ from each other in terms of their knowledge about on-board attributes. Based on the attribute knowledge theory of Alba and Hutchinson (1987), increased familiarity leads to increased expertise and novice consumers with very limited product-related experience usually have little understanding of the importance of product attributes, while experienced consumers usually have ample and confident knowledge about product attributes. Therefore, they are more likely to focus their attention on the most relevant and important attributes and to ignore unimportant ones during their decision-making process (Johnson and Russo, 1984; Brucks, 1985; Kerstetter and Cho, 2004). Such differences between novice and expert consumers may be particularly relevant in a cruise-decision context, because cruises are intangible and experiential products.

Concerning the cruise intention, this is the necessary prerequisite to the consumption process, that is, the decision (to go on a cruise) taken prior to the occurrence of that behaviour and concerns the probability of individual people exhibiting a particular type of behaviour (Ajzen and Fishbein, 1977). Swan and Frederick (1981) defined 'intention' as an individual's anticipated or planned future behaviour. Engel *et al* (1995) pointed out that behavioural intention

stems from attitudes, which means that a cruise consumers' possible inclination to purchase or repurchase a cruise relies on their attitudes to cruising. In the context of cruise tourism, quality and perceived value are the antecedents of satisfaction, leading to behavioural intention (Petrick, 2004).

With regard to competitiveness, this has become an attractive concept during the past two decades, especially in the disciplines of economics, management and politics. Michael Porter (1979, 1980, 1985, 1986) developed a series of measurement frameworks to analyse competitiveness. After that, many scholars carried out theoretical and empirical research in different competitive fields (Dunning, 1991; Lijesen *et al*, 2002; Dwyer and Kim, 2003), and their research mainly focussed on product price, market and service competitiveness (respectively, Woodruff, 1997; Boone, 2000; Starkie, 2001). Basically, tourism relies on the movement of tourists, from their permanent residence to the chosen destination, and the competitiveness of tourism mainly focuses on the service provided by tourism destinations. Pearce (1997) stated that the development, strength and weakness of competing destinations are crucial, Crouch and Ritchie (1999, 2005) pointed out that destination competitiveness relies greatly on practitioners and policymakers and Enright and Newton (2004, 2005) indicated that destination competitiveness depends on tourism attraction factors and tourism service. Obviously, cruise tourism is different from traditional tourism aimed at a specific destination, because it is the cruise ship itself that is the destination, with cruise ports as sub-destinations. This research regards competitiveness as the advantages of cruise tourism in competitive markets, including the attractions of push factors (cruise motivation) and pull factors (cruise

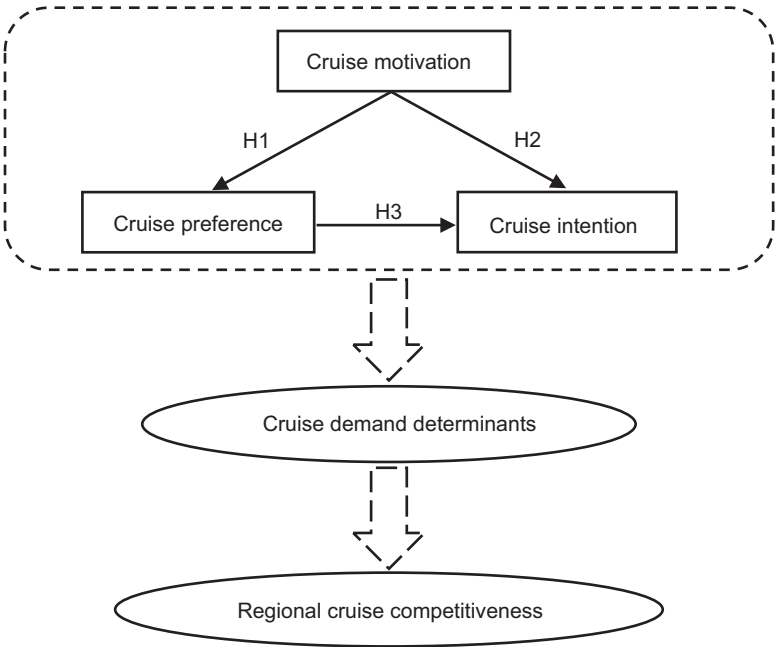

Figure 1. Conceptual model of cruise tourists' demand determinants in competitive markets.

on-board products and port facilities). And it is clear that competitiveness means to exploit the benefits of being different, based on a professional branding strategy.

In general, motivation, preference and intention are closely correlated and important to the passengers' cruise decision. Li *et al* (2010) studied American tourists who visited the countryside, and found that the only motivational factor which indirectly affected the revisit intention via the tourists' affective perception of a destination was 'escaping'. Hung and Petrick (2011) surveyed American cruise tourists, and found that escaping contributes the most to the intention to cruise, followed by learning, self-esteem recognition and bonding with families/friends. Based on the analysis above, the present research proposes three groups of hypotheses incorporated in a conceptual model of cruise tourism (see Figure 1), as follows.

H1: Tourists' cruise motivation has a significant effect (positive or negative) on their cruise preference.
H2: Tourists' cruise motivation has a significant positive effect on their intention to cruise.
H3: Tourists' cruise preference has a significant effect (positive or negative) on their intention to cruise.

Research design

The research design followed a strict, logical, and systematic approach. In April and May 2014, we interviewed several cruise experts, in particular the guest service manager of COSCO Star in Mainland China, the sales manager of Princess in Taiwan, the cruise director of Royal Caribbean in Hong Kong, the guest relationship manager of COSTA in Japan, and some related managers from tour agents in charge of cruise ticket distribution. On the basis of these interviews and some previous studies (Hung and Petrick, 2011; Xie *et al*, 2012), we designed a trial questionnaire and collected 123 answers to test the items over the period 1 to 3 May 2014, in Xiamen, in mainland China. We revised the questionnaire and conducted the final face-to-face cross-section surveys from 8 to 22 May 2014, in four international cruise ports of Taiwan: Keelung, Taichung, Kaohsiung and Hualien. We distributed 800 questionnaires in four different languages (English, Japanese, Simplified Chinese and Traditional Chinese, 200 in each language). Six hundred and forty-one questionnaires were collected (a response rate of 80.13%). Of those 575 were fully completed (a valid response rate of 71.88%).

Since Taiwan is a strategic geographical destination for Asian cruise lines connecting the four main cruise tourists source countries of mainland China, Hong Kong, Taiwan and Japan, we chose the four Taiwan ports in which to conduct our surveys. In general, most of the respondents were cruise tourists getting on-board COSCO Star (a Chinese state-owned cruise ship), Voyager of the Seas (belonging to Royal Caribbean, the second largest cruise group in the world), Diamond Princess (belonging to Carnival, the largest cruise group in the world), and Superstar Virgo (belonging to Genting Hong Kong, the third largest cruise group in the world). Table 1 shows the demographic characteristics

Table 1. Cruise tourists' demographic characteristics.

	Frequency	Percentage		Frequency	Percentage
Gender			*Nationality*		
Male	291	50.61	Mainland China	128	22.26
Female	284	49.39	Hong Kong	69	12.00
Age			Taiwan	150	26.09
18–29	186	32.35	Japan	138	24.00
30–39	93	16.18	Other	90	15.65
40–49	75	13.04	*Cruising experience*		
50–59	82	14.26	Never	222	38.61
60–69	80	13.91	First time	117	20.35
≥70	59	10.26	2 times	80	13.91
Marital status			3 times and above	156	27.13
Single	224	38.96	*Preferred partner*		
Married, no child	77	13.39	Alone	33	5.74
Married, with underage children	90	15.65	With tour group	31	5.39
Married, with adult children	184	32.00	With families/ friends	473	82.26
Occupation			With colleagues	25	4.35
Student	94	16.35	With others	13	2.26
Company staff	116	20.17	*Preferred time*		
Business owner/manager	51	8.87	≤ 2 days	29	5.04
Liberal profession	63	10.96	3–5 days	186	32.35
Government employee	62	10.78	6–9 days	191	33.22
Retired	98	17.04	10–14 days	115	20.00
Others (housewife, crew)	91	15.83	≥ 15 days	54	9.39
Monthly income			*Willing to pay*		
≤ US$1,000	209	36.35	≤ US$500	89	15.48
US$1,001–US$2,000	143	24.87	US$501–US$1,000	201	34.96
US$2,001–US$4,000	122	21.22	US$1,001–US$1,500	129	22.43
US$4,001–US$8,000	62	10.78	US$1,501–US$2,000	90	15.65
≥ US$8,001	39	6.78	≥ US$2,001	66	11.48
Education			*Willing to cruise*		
High school and below	126	21.91	Strongly unwilling	34	5.91
Vocational school	102	17.74	Unwilling	43	7.48
Bachelor's degree	213	37.04	Uncertain	162	28.00
Graduate and above	134	23.31	Willing	162	28.35
			Strongly willing	174	30.26

of the samples: there were almost equal numbers of male and female tourists; 48.53% of the cruise tourists were aged 18–39; 52.35% were single or married without children; under the category 'occupation', there were more company employees and retired cruise tourists than any other group, at 20.17% and 17.04%, respectively; 61.22% of the cruise tourists had a monthly income of less than US$2,000; 60.35% of the cruise tourists had a college education or above; cruise tourists from mainland China, Taiwan and Japan each had a similar percentage share (over 20%); and the shares of Hong Kong and other regional cruise tourists were both less than 20%.

There are some shared characteristics among cruise tourists in the new regional markets of mainland China, Taiwan, Japan, and Hong Kong: 48.53% of cruise tourists were less than 40 years' old; 61.22% of the cruise tourists had a comparatively low income of less than US$1,000/month; 60.35 % of the cruise tourists had a high level of education, and also 58.96% were first-time cruise tourists (see Table 1).

Table 1 also interprets the details of the cruise tourists' intentions: there were 82.26% cruise tourists who preferred to take a cruise with families/friends; the two most popular cruising time options, 3–5 days and 6–9 days, were chosen by, respectively, 32.35% and 33.22% of the respondents; 34.96% cruise tourists were willing to pay the price range US$501–US$1,000; 58.60% of cruise tourists were (strongly) willing to repeat cruising within 3 years, while only 13.39% were (strongly) unwilling to do this.

Measurement

Our paper tested the hypothesized theoretical model of the relationship between cruise motivation, preference and intention using a combination of SPSS 21.0, AMOS 21.0 and STATA 13.0 in a four-step approach. In Step 1, we used exploratory factor analysis on a 30% subsample of observations in order to divide items into different latent constructs, with some low-loading and cross-loading items being removed. In Step 2, we tested the reliability and validity of the factors on the remaining 70% of observations by a confirmatory factor analysis, resulting in some unreliable items being dropped. In this step, we confirmed the measurement model and tested the reliability of all the remaining factors to run the structural path model in AMOS 21.0. In Step 3, we designed a structural path model to test the hypothesized relationships between the latent variables, while in the final Step 4, we applied an ANOVA approach to find commonalities and differences in competitive regional markets.

Exploratory factor analysis

In order to determine the constructs of cruise motivation and preference, an exploratory factor analysis (EFA) in the form of a principal component analysis was carried out on the two scales. To this effect, we stratified the sample by markets, after which 30% of observations were randomly selected. In order to make sure the random selection did not interfere with the findings, we used chi-square tests to ensure that the subsample did not significantly differ from the total sample on gender, age, family, education or income. *p*-values were all

Table 2. Promax rotated pattern matrix of cruise motivation items.

Cruise motivation items	Self-esteem	Escaping	Learning	Bonding
I cruise to do something to impress others	**0.547**	–0.065	–0.265	0.443
I cruise to help me feel a better person	**0.695**	0.407	–0.111	–0.217
I cruise to increase my feelings of self-worth	**0.900**	–0.053	0.191	–0.170
I cruise to derive a sense of accomplishment	**0.730**	–0.143	0.180	0.152
I cruise to photograph exotic places to show friends	0.462	–0.021	–0.078	0.530
I cruise to be free to do whatever I want	0.125	**0.634**	0.194	–0.016
I cruise to escape from the routine of daily life	–0.036	**0.760**	–0.245	0.154
I cruise to give my mind a rest	–0.082	**0.715**	0.173	0.029
I cruise to gain knowledge	0.105	–0.092	**0.858**	–0.037
I cruise to enjoy activities that provide a thrill	0.133	0.025	**0.778**	0.069
I cruise to experience other cultures	–0.073	0.054	**0.844**	0.116
I cruise because my friends/families want to cruise	–0.107	0.044	0.052	**0.853**
I cruise to interact with friends/families	–0.091	0.137	0.210	**0.753**

Table 3. Promax rotated pattern matrix of cruise preference items.

Cruise preference items	Basic	Entertainment	Supplement	Sports	Recreation	Children	Asian	Ports
Cabin facilities	**0.727**	–0.003	0.023	–0.172	0.154	0.208	–0.021	–0.011
Room service	**0.753**	0.228	–0.019	–0.356	0.027	0.077	–0.073	0.002
Restaurants	**0.764**	0.184	0.266	–0.020	–0.005	0.049	–0.043	–0.009
Food	**0.690**	0.020	0.194	0.151	0.094	–0.089	–0.072	0.006
Crew service	**0.693**	–0.139	–0.182	0.191	–0.077	0.099	0.249	0.043
Cruise directors	**0.706**	–0.072	–0.237	0.232	–0.149	0.017	0.197	0.076
Bars	0.195	**0.825**	0.282	–0.073	0.101	–0.228	0.065	–0.048
Casino	0.020	**0.793**	0.153	0.090	–0.212	0.021	0.222	–0.101
Shows	0.288	**0.585**	–0.146	0.204	0.038	–0.462	0.081	–0.011
Night club	0.017	**0.900**	0.075	–0.187	0.027	0.000	0.043	0.038
Social gathering/party	–0.023	**0.587**	0.080	–0.110	0.333	0.020	–0.257	0.100
Amusing games	–0.102	0.361	–0.093	0.197	0.294	0.078	–0.133	0.180
Educational classes	0.121	0.263	–0.094	0.209	0.172	0.135	–0.081	0.130
Conference facilities	0.057	0.321	0.072	0.111	–0.038	0.486	–0.184	–0.030
Library	0.049	0.364	0.323	0.392	–0.146	0.102	–0.052	–0.024
Internet	0.095	0.144	**0.510**	0.380	–0.276	0.358	–0.188	0.079
Laundry	0.088	–0.117	**0.588**	0.646	0.135	0.148	–0.124	–0.133
Sports area	0.091	–0.214	0.260	**0.823**	0.167	–0.053	0.049	0.046
Running track	–0.002	–0.130	0.085	**0.984**	0.018	–0.162	0.155	–0.100
Climbing wall	–0.133	0.149	0.016	**0.830**	–0.119	0.077	0.088	–0.008
Miniature golf	–0.256	0.244	0.116	**0.651**	–0.022	0.192	0.129	–0.017
Ball activities	–0.169	0.061	–0.176	0.149	0.488	0.305	0.189	0.048
Spa	0.036	0.062	0.007	–0.109	**0.839**	0.118	0.169	–0.070
Beauty salon	0.059	0.180	0.005	–0.103	**0.772**	0.095	0.310	–0.188
Fitness	–0.008	0.002	–0.191	0.331	**0.664**	–0.298	–0.008	–0.013

Swimming pools/tubs	0.182	–0.296	–0.011	0.114	**0.618**	0.044	–0.201	0.161
Babysitting	0.165	–0.100	0.079	–0.052	–0.008	**0.922**	0.276	–0.085
Children	0.075	–0.164	0.047	0.002	0.129	**0.880**	0.202	–0.010
Duty free shops	0.470	0.208	–0.065	–0.091	0.105	0.085	0.392	–0.002
Mahjong/poker	–0.192	0.313	–0.072	–0.036	0.130	0.327	**0.582**	0.065
Teahouse	0.141	–0.094	0.057	0.267	0.116	0.144	**0.653**	0.153
Natural landscapes	–0.033	–0.075	0.496	–0.013	0.115	–0.009	0.229	**0.685**
Cultural landscapes	–0.099	0.061	0.401	0.013	0.017	–0.120	0.225	**0.834**
City landscapes	–0.110	0.146	0.255	–0.046	0.007	–0.066	0.133	**0.877**
Tour options	–0.110	0.159	–0.041	0.097	0.109	–0.112	0.043	**0.703**
Fundamental facilities	0.182	–0.132	–0.061	–0.109	–0.078	0.072	0.012	**0.828**
Friendly residents	0.118	–0.150	0.001	0.018	0.035	–0.077	–0.138	**0.822**
Consumption level	0.095	0.011	–0.138	–0.164	–0.296	0.136	–0.033	**0.884**

far above the 0.05 significance level, indicating comparability between both samples. We performed EFA with both an orthogonal method (Varimax rotation) and an oblique method (Promax rotation), the latter allowing for correlation between factors. Since the factor correlation matrix in Promax showed values above 0.32, being indicative of an overlap of more than 10% in variance among factors, oblique rotation was preferred, following Tabachnick and Fidell (2001).

With significant Kaiser–Meyer–Olin (KMO) value (significant at between 0.8 and 0.9) of both cruise motivation (0.800) and cruise preference (0.840), and a significant Bartlett's test of sphericity (p = 0.000), it was deemed that the use of EFA was appropriate (Field, 2009). The results show a four-factor division of cruise motivation (percentage of variance explained = 67.265), and eight constructs of cruise preferences (percentage of variance explained = 64.467). Promax rotation provides both a pattern matrix with factor loadings of items and a structure matrix with correlations between variables and factors. Both matrices led to a similar interpretation, and therefore in Tables 2 and 3 the results are limited to the pattern matrix.

A factor loading of above 0.5 indicates sufficient explanation of these items (Hair, 2006). Furthermore, a cross-factor loading of over 0.350 in different constructs can be a cause for concern. In the scale of cruise motivation, we dropped the item, 'I cruise to photograph exotic places to show friends', because of a significant cross-factor loading. However, as noticed in previous theoretical studies (Hung and Petrick, 2011), we placed the other two items with cross-factor loadings under the 'self-esteem' dimension, 'I cruise to do something to impress others' and 'I cruise to help me feel a better person', and awaited confirmation in Step 2. In the scale of cruise preference, we removed 'laundry' and 'internet' because of significant cross-loadings, and consequently the 'supplement' dimension was dropped; but 'natural landscapes' and 'cultural landscapes' with cross-loadings were significant under the 'ports' dimension, and we kept these to test them in the confirmatory analysis. In addition, six more items were dropped for having a low loading (<0.5), 'amusing games', 'educational classes', 'conference activities', 'library', 'ball activities' and 'duty-free shops'. Finally, we retained four dimensions with 12 items in the scale of cruise motivation and seven dimensions with 30 items in the scale of cruise preference for further confirmatory analysis.

Confirmatory factor analysis

For testing the construct reliability of cruise motivation and preference, we carried out a confirmatory factor analysis (CFA) on the two scales, using the remaining 70% of the sample after, again, confirming subsample representativeness by employing chi-square analyses. Such a CFA takes the form of a measurement model in structural equation modelling and precedes the evaluation of the structural relationships between latent factors. Cronbach's α is often used to assess the latent constructs' internal consistency; Cronbach's α values should be higher than 0.6. It achieves convergent validity when the t-statistics for the factor loadings are statistically significant, while the parameter estimates should be higher than 0.4 without serious cross-loadings. Although composite reliability (CR) should be a minimum of 0.7 to indicate

adequate convergence or internal consistency, a value of 0.6 can be sufficient if other reliability indicators score sufficiently (Hair, 2006). In order to test the discriminant validity of the different constructs, it assesses whether the square root of the average variance extracted (AVE) of each latent construct is larger than the correlation between different latent constructs. When comparing the AVE with the correlation coefficient, the value of the AVE for each construct should be at least 0.5 (Fornell and Larcker, 1981), indicating that the items of the construct explain more variance than items of the other constructs.

Based on the analysis of the measurement model, we removed a number of items in order to improve composite reliability and discriminant validity. For the cruise motivation, this removed the item of 'I cruise to help me feel a better person' from the construct of 'self-esteem'. In the scale of cruise preference, it dropped five items, viz. 'crew service' and 'cruise directors' under the 'basic' construct, 'bars' and 'shows' from the 'entertainment' construct, and 'mahjong/poker' from the 'Asian' construct. It is worth mentioning that we retained the item 'teahouse' under the 'Asian' construct as a singular indicator, since this is a quite unique characteristic, sufficiently different from all other preference factors.

While Cronbach's α and CR both reach satisfactory values in all factors, we do note the comparatively low AVE scores of 'escaping' (0.436) and 'learning' (0.434) in the scale of cruise motivation. However, the measures could not be sufficiently improved by deleting any response item and the factors are conceptually different from other motivations. Since this was theoretically validated in a previous study (Hung and Petrick, 2011), we decided to retain these two constructs in the 'motivation' scale. The measurement model also showed acceptable model fit criteria, with acceptable model fit indices (CMIN/DF = 2.150, CFI = 0.903, NFI = 0.834, RMSEA = 0.053).[2] Ultimately, there are 4 constructs present with 11 factors in the scale of cruise motivation and 7 dimensions of 25 factors under cruise preference for further analysis in our structural path model. The related estimates are shown in Tables 4 and 5.

Structural path model

We tested the full model on both deleted and specified paths, whereby non-significant paths were trimmed down, re-specifying the model in every iteration. The chi-square difference between the original full model and the model in the last iteration of trimming was 9.21 with 6 degrees of freedom, and remained below the chi-square threshold value of 12.59 (for $\alpha = 0.05$). Table 6 gives an overview of the observed regression paths in this final iteration. We confirmed a total of 32 structural relationships between the latent factors of 'motivation', 'preference', and the possibility of future cruises in the next 3 years (as a measure of loyalty). However, three of the hypotheses proved to have a reversed sign, viz. the preferences for 'recreation', 'children' and 'ports', which showed a negative regression on cruise intention.

Generally, the model fit indices of our final model did reach satisfactory levels, with a CMIN/DF of 2.439, a CFI of 0.912, an NFI of 0.861, and a RMSEA of 0.050 indicating a satisfactory model fit for the final model, so that the final parameter estimates can also be considered sufficiently stable.

Table 4. Standardized and unstandardized estimates of cruise motivation measurement factors.

Dimension	Factor	St FL	Unst FL	SE	*p*	Cronbach's α	AVE	CR
Self-esteem	Increase self-worth	0.749	1.000					
	Impress others	0.486	0.704	0.078	***	0.733	0.527	0.760
	Derive accomplishment	0.886	1.215	0.098	***			
Escaping	Escape from routines	0.643	1.000					
	Be free	0.633	0.851	0.093	***	0.687	0.436	0.698
	Mind rest	0.702	0.868	0.091	***			
Learning	Gain knowledge	0.617	1.000					
	Enjoy thrill	0.690	1.092	0.113	***	0.692	0.434	0.696
	Experience cultures	0.667	0.958	0.101	***			
Bonding	Friends/family's want	0.594	1.000			0.652	0.514	0.674
	Interact with friends/family	0.822	1.217	0.113	***			

Notes: St FL = standardized factor loading; Unst FL = unstandardized factor loading; SE = standard error; AVE = average variance extracted; CR = composite reliability.
$^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

Table 5. Standardized and unstandardized estimates of cruise preference measurement factors.

Dimension	Factor	St FL	Unst FL	SE	*p*	Cronbach's α	AVE	CR
Basic	Restaurants	0.882	1.000					
	Cabin facilities	0.631	0.784	0.062	***	0.786	0.508	0.799
	Room service	0.513	0.712	0.071	***			
	Food	0.770	0.925	0.060	***			
Entertainment	Night club	0.876	1.000					
	Casino	0.532	0.641	0.066	***	0.719	0.512	0.752
	Social gathering/party	0.697	0.743	0.062	***			
Sports	Running track	0.696	1.000					
	Sports area	0.557	0.708	0.071	***	0.800	0.506	0.801
	Climbing wall	0.804	1.280	0.094	***			
	Miniature golf	0.763	1.194	0.091	***			
Recreation	Spa	0.851	1.000					
	Beauty salon	0.751	0.876	0.058	***	0.805	0.503	0.798
	Swimming pool/hot tubs	0.586	0.642	0.056	***			
	Fitness	0.616	0.683	0.056	***			
Children	Babysitting service	0.894	1.000			0.869	0.769	0.870
	Children centre	0.860	0.946	0.065	***			
	Consumption level	0.654	1.000					
Ports	Natural landscapes	0.783	1.251	0.095	***			
	Cultural landscapes	0.832	1.208	0.087	***			
	City landscapes	0.847	1.227	0.087	***	0.908	0.567	0.901
	Tour options	0.731	1.149	0.092	***			
Asian	Fundamental facilities	0.732	1.092	0.087	***			
	Friendly residents	0.667	1.006	0.066	***			
	Teahouse	0.917	1.000			NA	NA	NA

Notes: St FL = standardized factor loading; Unst FL = unstandardized factor loading; SE = standard error; AVE = average variance extracted; CR = composite reliability.
$^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

Table 6. Significant regression paths in structural equation model.

Regression path	Sub-regression path	St RW	Unst RW	SE	CR	*p*
	Self-esteem → Basic	–0.300	–0.233	0.057	–4.070	***
	Self-esteem → Entertainment	–0.248	–0.273	0.103	–2.657	**
	Self-esteem → Sports	–0.351	–0.286	0.084	–3.421	***
	Self-esteem → Recreation	–0.420	–0.373	0.089	–4.197	***
	Self-esteem → Children	–0.292	–0.361	0.113	–3.207	**
	Self-esteem → Ports	–0.309	–0.203	0.047	–4.349	***
H1: Motivation → Preference	Escaping → Basic	0.408	0.444	0.110	4.040	***
	Escaping → Recreation	0.400	0.498	0.114	4.353	***
	Escaping → Children	0.214	0.370	0.151	2.456	*
	Escaping → Ports	0.405	0.372	0.093	3.999	***
	Escaping → Teahouse	0.312	0.543	0.158	3.435	***
	Learning → Basic	–1.158	–1.171	0.492	–2.382	*
	Learning → Entertainment	–1.772	–2.547	1.085	–2.348	*
	Learning → Sports	–2.281	–2.423	1.016	–2.385	*
	Learning → Recreation	–2.310	–2.669	1.086	–2. 458	*
	Learning → Children	–2.096	–3.371	1.322	–2.549	*
	Learning →Ports	–1.115	–0.952	0.458	–2.079	*
	Learning → Teahouse	–1.789	–2.890	1.099	–2.631	**
	Bonding → Basic	1.273	2.176	0.842	2.583	**
	Bonding → Entertainment	2.244	5.452	1.924	2.833	**
	Bonding → Sports	2.795	5.018	1.797	2.793	**
	Bonding → Recreation	2.743	5.357	1.904	2.814	**
	Bonding → Children	2.351	6.391	2.302	2.776	**
	Bonding → Ports	1.426	2.058	0.789	2.608	**
	Bonding → Teahouse	1.788	4.882	1.876	2.603	**
H2: Motivation → Intention	Escaping → Cruise Intention	0.207	0.376	0.150	2.500	*
	Bonding → Cruise Intention	0.283	0.806	0.237	3.402	***
H3: Preference → Intention	Basic → Cruise intention	0.125	0.209	0.081	2.587	**
	Sports → Cruise intention	0.149	0.236	0.108	2.185	*
	Recreation → Cruise intention	–0.163	–0.238	0.107	–2.225	*
	Children → Cruise intention	–0.143	–0.150	0.055	–2.704	**
	Ports → Cruise intention	–0.105	0.100	–2.075	0.038	*

Notes: St RW = standardized regression weight; Unst RW = unstandardized regression weight; SE = standard error; CR = critical ratio. $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

Results for Asian markets in particular

On the basis of the structural path model of cruise motivation, preference and intention, our research then continued by comparing growing regional markets of mainland China, Hong Kong, Taiwan, Japan and other global regions via an ANOVA. The aim of this analysis was to identify core competitive advantages of cruise tourism in Asian markets. We used Levene's test of homogeneity of variance in order to identify the requirements for ANOVA. If there was significant deviation of variances, we applied the Welch ANOVA and Tamhane's T2 post hoc test. In other cases where homogeneity of variance held, Bonferroni's post hoc test was preferred. The ANOVA was based on factor scores as constructed from the previous confirmatory factor model.

Table 7 incorporates the results of the comparison of means analysis in the five markets. For cruise motivation, a comparison of means shows that the Taiwanese market attaches higher importance to the 'escaping' and 'bonding' motives, as compared with tourists from mainland China, Hong Kong, Japan and other global markets. Similarly, 'escaping' is the most important motive for mainland Chinese, Japanese and those from Hong Kong. While Japanese cruise tourists are considerably more motivated by 'self-esteem', they are least motivated by 'bonding' than visitors from other markets. In addition, 'learning' is a comparatively less strong motivation in four Asian markets than in other global ones. In the mean comparison of cruise preference, all five markets show the highest preference for 'basic' and 'recreation', with the lowest value being placed on 'sports' facilities.

Based on a one-way ANOVA, there is no significant difference in 'self-esteem' between the five regional markets. However, this analysis shows considerable differences in the other three motives and all the seven dimensions of preference in Table 8. In cruise motivation, the Taiwanese are significantly more motivated by 'escaping', 'learning' and 'bonding' than tourists from the other four markets. In the Japanese market, tourists are significantly less motivated by 'learning' than in the other markets, and also place lower value on 'bonding' than those in the markets of Hong Kong and other regions. In cruise preference, mainland Chinese tourists attach significantly lower value to 'basic', 'entertainment', 'sports' and 'recreation' than the Taiwanese, but place higher value on 'children' and 'ports' than tourists from other markets. It is a similar situation for the markets of Hong Kong and Japan in that they both show significantly less preference than the Taiwanese market for 'entertainment', 'sports', 'recreation', 'children' and 'ports'. But tourists from Japan exhibit a significantly higher preference for 'teahouse' than those in the other markets except for the Taiwanese, who also demand comparatively more 'teahouse'.

Generally, it is worth noting that Taiwanese tourists appear to be among the most demanding customers, showing significantly higher preferences for all the 'basic', 'entertainment', 'sports', 'recreation', 'children' and 'ports' facilities than tourists from other markets. In contrast to the markets of Japan and other regions, tourists from mainland China exhibit a higher preference for 'children' and 'ports'. The Japanese tourists give the highest value to 'teahouse', followed by tourists from Taiwan, mainland China and Hong Kong, but tourists in other global markets have much less preference for this facility.

Table 7. Mean and standard deviation of cruise motivation and preference in different markets.

Cruise factors of motivation and preference	Mainland China		Hong Kong		Taiwan		Japan		Others		*p*-value between groups
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Cruise motivation											
Self-esteem	2.486	0.810	2.610	0.709	2.676	0.712	2.699	0.851	2.498	0.917	0.113[a]
Escaping	3.244	0.537	3.234	0.509	3.473	0.506	3.264	0.628	3.234	0.668	0.002
Learning	3.206	0.545	3.198	0.508	3.393	0.522	3.098	0.715	3.396	0.617	0.000
Bonding	2.490	0.589	2.714	0.479	2.722	0.546	2.449	0.765	2.710	0.600	0.000
Cruise preference											
Basic	4.017	0.669	4.088	0.598	4.302	0.578	4.205	0.646	4.195	0.606	0.003
Entertainment	3.239	0.817	3.445	0.693	3.763	0.799	3.118	0.909	3.450	1.013	0.000
Sports	2.355	0.680	2.417	0.607	2.693	0.700	2.361	0.651	2.598	0.841	0.000
Recreation	3.827	0.801	3.906	0.637	4.348	0.747	3.816	0.921	4.026	0.917	0.000
Children	3.351	0.868	2.943	0.892	3.568	0.942	2.997	1.031	2.859	1.229	0.000
Ports	3.282	0.556	3.008	0.493	3.444	0.548	3.243	0.639	3.153	0.600	0.000
Asian	3.245	0.772	3.027	0.800	3.447	0.848	3.584	0.911	2.959	1.116	0.000

Notes: SD = standard deviation; [a]no significant difference between groups.

Table 8. Results of independent samples' ANOVA in different regional markets.

Cruise factors and *p*-value of Levene's test		Mainland China		Hong Kong		Taiwan		Japan		Regional markets
		MD	*p*-value	MD	*p*-value	MD	*p*-value	MD	*p*-value	
Escaping	0.008[a]	0.010	1.000							Hong Kong
		–0.229*	0.003	–0.239*	0.015					Taiwan
		–0.021	1.000	–0.031	1.000	0.209*	0.022			Japan
		0.010	1.000	0.000	1.000	0.239*	0.038	0.031	1.000	Others
Learning	0.003[a]	0.008	1.000							Hong Kong
		–0.188*	0.038	–0.195	0.094					Taiwan
		0.108	0.836	0.100	0.941	0.296*	0.001			Japan
		–0.191	0.180	–0.198	0.245	–0.003	1.000	–0.299*	0.009	Others
Bonding	0.000[a]	–0.223*	0.044							Hong Kong
		–0.232*	0.008	–0.008	1.000					Taiwan
		0.041	1.000	0.264*	0.027	0.273*	0.006			Japan
		–0.220	0.076	0.003	1.000	0.012	1.000	–0.261*	0.044	Others
Basic	0.491[b]	0.072	1.000							Hong Kong
		–0.286*	0.002	–0.214	0.184					Taiwan
		–0.189	0.138	–0.117	1.000	0.097	1.000			Japan
		–0.178	0.376	–0.107	1.000	0.107	1.000	0.010	1.000	Others
Entertainment	0.003[a]	–0.207	0.479							Hong Kong
		–0.525*	0.000	–0.318*	0.031					Taiwan
		0.120	0.949	0.327*	0.045	0.645*	0.000			Japan
		–0.211	0.662	–0.005	1.000	0.313	0.125	–0.332	0.121	Others
Sports	0.011[a]	–0.062	0.999							Hong Kong
		–0.338*	0.001	–0.276*	0.034					Taiwan
		–0.006	1.000	0.055	1.000	0.331*	0.000			Japan
		–0.243	0.222	–0.181	0.712	0.095	0.990	–0.237	0.224	Others

Continued

Table 8 continued.

Cruise factors and *p*-value of Levene's test		Mainland China		Hong Kong		Taiwan		Japan		Regional markets
		MD	*p*-value	MD	*p*-value	MD	*p*-value	MD	*p*-value	
Recreation	0.004[a]	–0.079	0.998							Hong Kong
		–0.521*	0.000	–0.442*	0.000					Taiwan
		0.011	1.000	0.090	0.995	0.532*	0.000			Japan
		–0.199	0.646	–0.120	0.982	0.322	0.053	–0.210	0.622	Others
Children	0.000[a]	0.408*	0.024							Hong Kong
		–0.217	0.382	–0.625*	0.000					Taiwan
		0.355*	0.025	–0.054	1.000	0.572*	0.000			Japan
		0.493*	0.013	0.084	1.000	0.710*	0.000	0.138	0.992	Others
Ports	0.006[a]	0.275*	0.005							Hong Kong
		–0.162	0.145	–0.437*	0.000					Taiwan
		0.040	1.000	–0.235*	0.039	0.201*	0.045			Japan
		0.129	0.681	–0.145	0.634	0.291*	0.002	0.090	0.965	Others
Asian (teahouse)	0.000[a]	0.218	0.499							Hong Kong
		–0.201	0.330	–0.420*	0.006					Taiwan
		–0.339*	0.012	–0.557*	0.000	–0.138	0.873			Japan
		0.286	0.315	0.068	1.000	0.487*	0.005	0.625*	0.000	Others

Notes: MD = mean difference (column mean-row mean); [a]based on Welch ANOVA and Tamhane's T2 post hoc test; [b]based on ANOVA and Bonferroni. *$p < 0.05$.

Discussion and limitations

Our research is based on three conceptual hypotheses concerning cruise motivation, preference and intention. The statistical test of the structural path model supported all the three groups of hypotheses with 32 significant regressions, although some signs were not according to our expectations. We found that those cruise passengers who are motivated by increasing 'self-esteem' and 'learning' have significantly lower preferences for nearly all the cruise facilities in our analysis. In contrast to the other motives, 'escaping' and 'bonding' both significantly positively influence cruise tourists' demand for cruise facilities. These tourist types fall into the highest categories of the travel career ladder (Pearce, 1993); being motivated by self-esteem and self-development, they are therefore distinct from the tourists who, by comparison, are travelling primarily for purposes of relaxation and stimulation. The latter categories are considered to have a more dependable travel personality, and are looking for familiar surroundings (Chen *et al*, 2011). It is therefore not surprising that the preferences for cruise facilities are lower for tourists with intrinsic motives – self-esteem and learning – than for tourists with the external motivations of relaxation and bonding. The tourists who take a cruise to increase their 'self-esteem' or 'learning' are less interested in the existing cruise facilities, and they need different cruise offerings.

Cruise tourists whose main motive is to escape from the routine of daily life thus clearly fall into the relaxation and stimulation dimensions of Pearce (1993). To satisfy these tourists, the 'basic', 'recreation' and 'ports' facilities, need to be up to the standard. In addition, tourists from Asian markets also show significant interest in 'children' and 'teahouse'. For them, other preferences are comparatively less important, because their primary motive is to get away from their home environment. This group of tourists is an interesting segment, since they are more likely to book another cruise in the next 3 years. These results correlate with the findings of Hung and Petrick (2011) and relate to their tourist profile as being more comfortable in familiar environments instead of seeking novelty when travelling (Chen *et al*, 2011). As such, satisfying the needs of this segment offers opportunities to increase cruise loyalty and return visits.

Cruise tourists with a motivation for 'bonding' with their travel partners exhibit the most positive preferences and intention. They fall into the middle category of the travel career ladder, holding the middle between pure relaxation purposes and self-actualization motivations. Having a mid-centric travel personality, these tourist types want to exchange novel experiences for basic comfort and relaxation (Pearce, 1993; Chen *et al*, 2011). This is noticeable from the structural path model where these customers are the most demanding, since all the facilities on offer on the cruise ship are important for them. Since the positive relationship between 'bonding' and 'cruise intention', similar to Hung and Petrick (2011), showing the economic potential of this group, the cruise company may pay attention to the satisfaction of this segment, even if it might be difficult to fully meet their expectations.

Last, our research found five preferences to be related to cruise intentions. When 'basic' and 'sports' facilities were preferred, the chance of a return cruise was significantly higher. Tourists who prefer 'basic' and 'sports' facilities are most likely accompanied by families or friends on their current trip. As such,

a positive cruise experience may increase the chance of them returning as leisure tourists with their partners for 'escaping' or 'bonding' at a later time, coinciding with the behavioural intention of meeting tourists (Susyarini *et al*, 2014). Conversely, a preference for 'recreation' or 'ports' facilities, actually decreased the chance of a new cruise booking within 3 years. This does not mean that providing these services is not important for cruise lines, rather that this type of wellness tourism is not exclusively linked to cruising and it therefore does not necessarily generate a competitive advantage. The tourists' preferences regarding facilities for 'children' exhibited this negative relationship with cruise intention as well. People with these preferences are obviously families with small children, and, as such, may find their family situation to be an important inhibitor to cruising regularly (Yarnal *et al*, 2005).

Our structural path model offered some interesting insights into the general structure of cruise motivation, preference and intentions, while the ANOVA-results shed much light on the commonalities and differences in Asian markets. This can aid cruise companies to understand the various demands in different growing markets. As shown in Table 7, in general, the primary motives for all markets are 'escaping' and 'learning'. However, there are still important regional differences to note; core cruise competitive advantages in growing regional markets are not universal. Cruise companies have to be aware that for the Taiwanese 'escaping' is, on average, a more important motive to undertake a cruise than it is for tourists from other markets. Marketing aimed at Taiwanese customers should thus take this into account and focus on the preferences that were associated with this motive. In addition, the motives of 'learning' and 'bonding' are less important in the Japanese market than in the other ones. From these results it can be concluded that the motive of 'escaping' is best used as a marketing factor in Taiwan, where tourists seem especially interested in escaping from the routine of daily life. Conversely, it should not highlight learning-experiences in Japan. Considering the importance of 'bonding' in all markets, it is of the utmost importance to not only advertise the possibility for social group interaction, but also to provide the necessary amenities, and possibly offer group discounts to further attract Asian groups with a primary interest in social interaction, since Yarnal (2004) showed that cruising in social groups can positively affect repeat cruising.

Moving the focus now to cruise preferences, on average, 'basic' and 'recreation' facilities were the most important, although the latter do not by themselves lead to a higher instance of return visit as discussed earlier. It is noticeable that 'ports' facilities are not among the most important aspects of a cruise, holding only sixth place for Taiwan, fifth for Hong Kong and fourth for mainland China, Japan and other markets. This coincides with the findings indicating an increased importance of the ship itself as the destination of interest (Weeden *et al*, 2011). Furthermore, 'sports' facilities are least preferred throughout all markets, similar to the results of Xie *et al* (2012). Here too, we noticed the important regional differences.

Compared with other regions, cruise tourists from Hong Kong show significantly less interest in 'port' facilities while the Taiwanese, and to a lesser extent the mainland Chinese, have more interest in cruise ports. Apart from ship-based cruise facilities, the markets of Taiwan and mainland China should therefore be approached by promoting the attractions of cruise ports. Taiwan is a market

noticeable for a significantly higher preference for both on-board 'recreation' and 'entertainment'. In terms of cultural differences, it should be noted that Taiwan has a higher value on Hofstede's indulgence-dimension than mainland China, Hong Kong and Japan, indicating that the Taiwanese society is more likely to focus on gratification, fun and enjoyment of life than the other regions (Hofstede *et al*, 2010). Our analysis showed that Japan is the most valuable country when cruise companies consider offering the teahouse facility, followed by other Asian markets, Taiwan, mainland China and Hong Kong. In addition, children's facilities are comparatively more important for the markets of mainland China and Taiwan than for the markets of Japan and Hong Kong. As a result, cruising for extended families with children can best be aimed at the markets of mainland China and Taiwan.

Some limitations of the study are also noted. Although the quantitative analysis is solid and the results of the structural path model are generally consistent with our hypotheses, there are a small number of exceptions, especially in the cruise preference scale, such as the removed items 'crew service', 'cruise directors', 'bars' and 'shows', which might play a role in the cruising decision, but did not show sufficient validity to be included in our factorial model. It would be worthwhile performing additional analyses in order to better comprehend such anomalies. Also of interest is the link between motivation, preference, satisfaction and loyalty (Yuksel *et al*, 2010). Loyalty is generally related to the satisfaction of expectations, and therefore we need information on whether cruise preferences were in fact satisfied during the trip. This is likely to be related to the difference between novice and repeat cruise tourists, with the latter having more realistic expectations through experience. Adding cruise experience to the model might offer further insight into the motivations and preferences of first-time versus repeat cruise tourists.

Conclusion and implications

The results of our study offer two main contributions to cruise research, first, regarding cruise theory, it has creatively connected the theories of motivation, preference and intention, employing the cruise 'motivation–preference–intention' structural path model to test the validity of the regression relationships between them, finding significant effects (positive or negative) between cruise motivation and preference, significant positive effects between cruise motivation and intention, and significant effects (positive or negative) between cruise preference and intention. This paper has extended the previous research of cruise motivation (Hung and Petrick, 2011) and cruise preference (Xie *et al*, 2012), by refining their scales in a comprehensive structural path model. Second, this research has combined respondents who were repeat cruise tourists and those who were potential novice cruise tourists, from all around the world, though mainly from four Asian markets: mainland China, Hong Kong, Taiwan and Japan. The comparison of the four Asian markets shows the characteristics of cruise tourists' demand determinants in terms of motivation, preference and intention, which will help other researchers and cruise companies to understand growing cruise markets in Asia. This study has advanced the research into those attributes of on-board facilities, which influence the decision making of both

seasoned and potential cruise tourists (Xie *et al*, 2012), employing ANOVA to compare the commonalities and differences of the five markets to draw out some universal standards of cruise competitiveness. All that will give the cruise companies valuable guidelines to develop these competitive regional markets. Cruise companies can get some idea of the marketing implications of common features among Asian markets, in which the tourists are all highly motivated by 'learning' and 'bonding', especially in the Taiwanese market. From this awareness of cruise preference, cruise companies could adapt their products and services to match cruise tourists' demands in the Asian markets, such as strengthening 'recreation' facilities and reducing 'sports' provision, focusing particularly on the high demand market of Taiwanese tourists.

Although our study shows that universal competitive advantages for all cruise markets are difficult to formulate, especially for growing cruise markets in Asia, nevertheless, we identify some important shared commonalities, notably the high importance attached to 'bonding' and 'recreation' facilities, while those provided for 'sports' are considered by far the least important. On the basis of the above analysis, we conclude that the core cruise competitive advantages in growing Asian markets relate to the possibility of offering group-specific activities that satisfy the need to spend time together in dedicated social groups. The importance of 'bonding' is quite typical of the collectivist nature of Asian cultures, in contrast to the individualism prevalent in Western nations. Satisfying the bonding motive offers opportunities for cruise companies, since it is possibly related to return intentions. However, doing this also presents future challenges to the market in which the tourists are most motivated by bonding, because this segment of the Taiwanese market, in particular, had the highest demand for a diversity of cruise facilities. Considering that all segments further showed a relative preference for on-board facilities over port facilities, which were only of modest importance, the primary focus of cruise companies in conquering the Asian markets should be on ship-based facilities, with secondary attention to the quality of ports of cruise lines.

In the field of cruise consumption, there are many phenomena still waiting to be explained. With regard to the varied features of cruise tourists in different markets, it would be meaningful to research the development of competitive cruise markets in the same region, because cruise lines always combine different markets in a region. There is considerable need to design and analyse general theories on cruise economics, particularly in the context of growing cruise markets.

Endnotes

1. This average expenditure is based on a port visit by 85% of the cruise passengers and 38% of the crew members.
2. CMIN/DF = Chi square/degree of freedom ratio; CFI = comparative fix index; NFI = normed fit index; RMSEA = root mean square error of approximation.

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